



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

Hierarchical Data Formats (HDF) Update

Latest HDF releases and more

The HDF Group

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Outline

- The HDF Group Website changes
- Update on HDF5 1.8.19, 1.10.1 and HDF 4.2.13
- Updates on HDF-Java, HDFView 3.0 and other tools
- Supported compilers and systems
- Compression library for interoperability with h5py and Pandas
- Tell us about your needs!

Where to find us on the Web?

- New Website (<https://hdfgroup.org>)
 - Info about organization
 - Latest 1.10 releases and HDFview 3.0
 - New commercial tools by The HDF Group
 - ODBC (Excel connector to HDF5)
 - Registration
 - Links to The HDF Group Support Website (<https://support.hdfgroup.org>)
 - Documentation
 - Old releases
 - Misc. information about projects
 - We are working on the new Support Portal (launch by the end of 2017)
- *Send us your feedback!*

Latest HDF releases

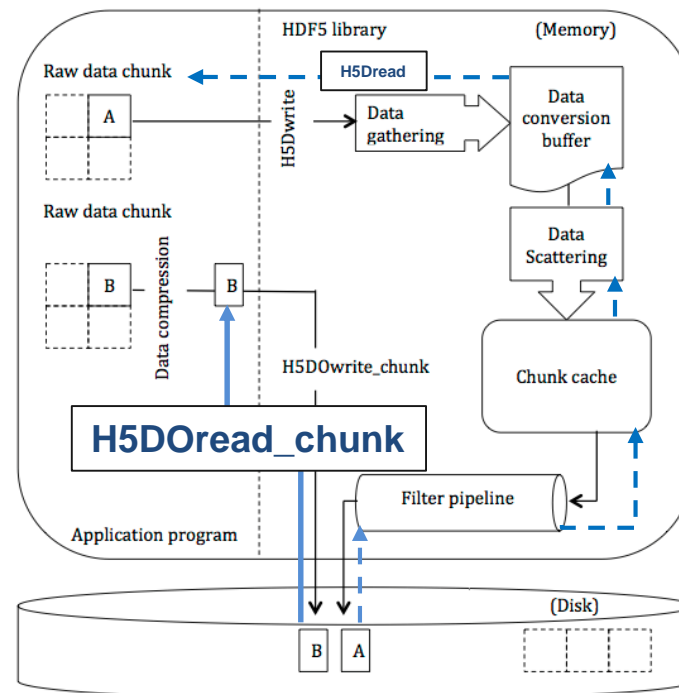
- Release cycle – once a year
- HDF 4.2.13 (June 30, 2017)
 - Memory leak fixes
 - Support for Mac OS 10.12
 - Support for the latest GNU, PGI and Intel compilers
- *We do not plan any major work (i.e., performance improvements, new features, etc.) for HDF4*
- *Encourage to move to HDF5*

HDF5

- Two versions
 - HDF5 1.8.19 (May 16, 2017)
 - Bug fixes, new APIs
 - HDF5 1.10.1 (April 27, 2017)
 - New features, extensions to HDF5 file format
- *We plan to deprecate HDF5 1.8 in the next two years; date will be announced on HDF-FORUM and news mailing lists*
 - *Biggest impact will be on the HDF5 Java applications (see Java updates slides)*
- *We can help you! Start migration early, so we can fix the issues you may find before HDF5 1.8 becomes unsupported.*

HDF5 1.8.19 New Features

- H5DRead_chunk
 - Function to read compressed data without uncompressing it (see H5DWrite_chunk)



HDF5 1.10.1 (Performance)

- “Evict on close” feature
 - Reduces memory footprint when iterating through many HDF5 objects (i.e, files, groups, datasets)
- I/O improvements
 - Paged Aggregation
 - Page Buffering

<https://support.hdfgroup.org/HDF5/docNewFeatures/>

HDF-JAVA Update

- HDF4 and HDF5 JNI are part of the HDF4 and HDF5 **1.10** source distribution
 - *HDF5 JNI supports 64-bit objects identifiers; code based on the previous versions of HDF5 JNI need*

HDFView 3.0 (beta)

- HDFView 3.0-beta release (May 31, 2017)
 - The Graphical User Interface (GUI) framework that HDFView uses was migrated from Swing (GUI widget toolkit for Java; part of Oracle's Java Foundation Classes) to Standard Widget Toolkit (<http://www.eclipse.org/swt/>), which provides a more native application look and feel and advanced support for tables.
 - The data views have been separated from the main HDFView window. The main HDFView window still displays open files and their structures on the left side of the window, and it now displays any metadata on the right side.
 - This release includes improved support for various datatypes (compound, array of compound, and opaque).
- HDFView 3.0 planned for December 2017

HDFView 3.0 Demo

- *Your feedback will be highly appreciated!*

HDF Tools

- Command-line tools in HDF4 and HDF5
 - Display content
 - Copy data from one file to another
 - Diff two files
- Maintenance mode (bug fixing)
- Which tools are missing?
 - HDF4 and HDF5 diff
 - ?

Supported Compilers

- GNU
- PGI
- Intel
- We test with two latest compiler versions available
- *Other?*

Supported OSs

- Linux 2.6, 2.7 and 3.10
- Mac OS X 10.(8,9,10,11) and moving to 10.12
- Windows 10 (32 and 64-bit)
 - VS 2015 and Intel Fortran v.16
- Windows 7 (32 and 64-bit)
 - VS 2013 and Intel Fortran v.15
- Cygwin 32-bit
- SunOS 5.11 (32 and 64-bit)
- PowerPC 64
- Different Linux distributions (Fedora, Suse, Debian)
- *Anything missing?*

Compression Library

- HDF5 compression filters (plugins)
- Dynamically loaded at run-time
 - BZIP2 (PyTables, Pandas)
 - MAFISC
 - BLOSC (PyTables, Pandas)
 - LZ4 (h5py)
 - More filters are coming....
- Contact help@hdfgroup.org if interested to try

Open Discussion

- Tell us about your needs

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